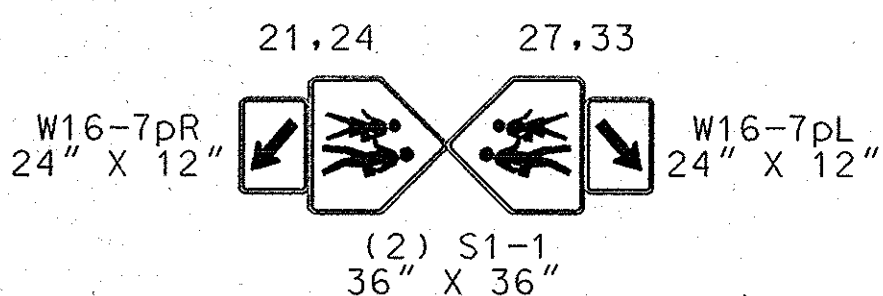
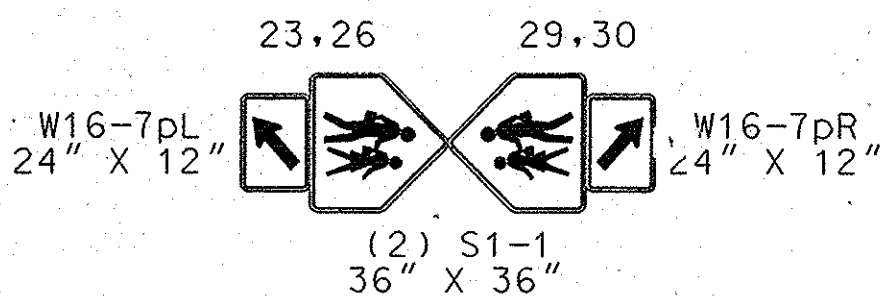
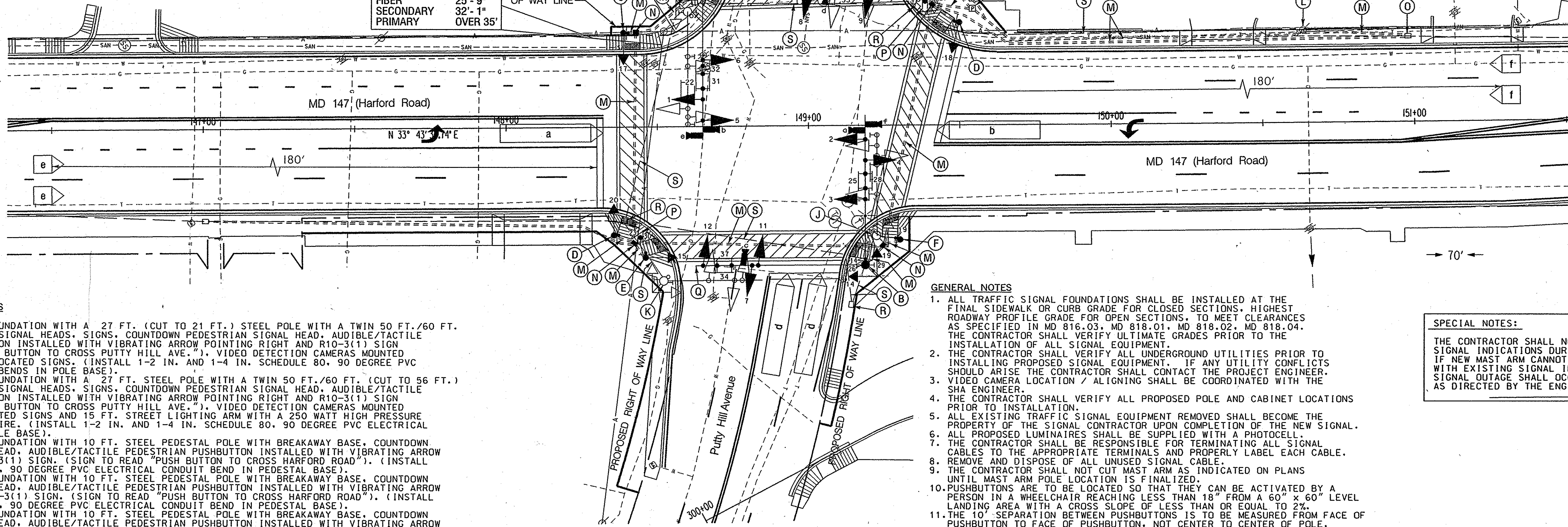


MD 147 IS ASSUMED TO RUN
IN A NORTH-SOUTH DIRECTION.

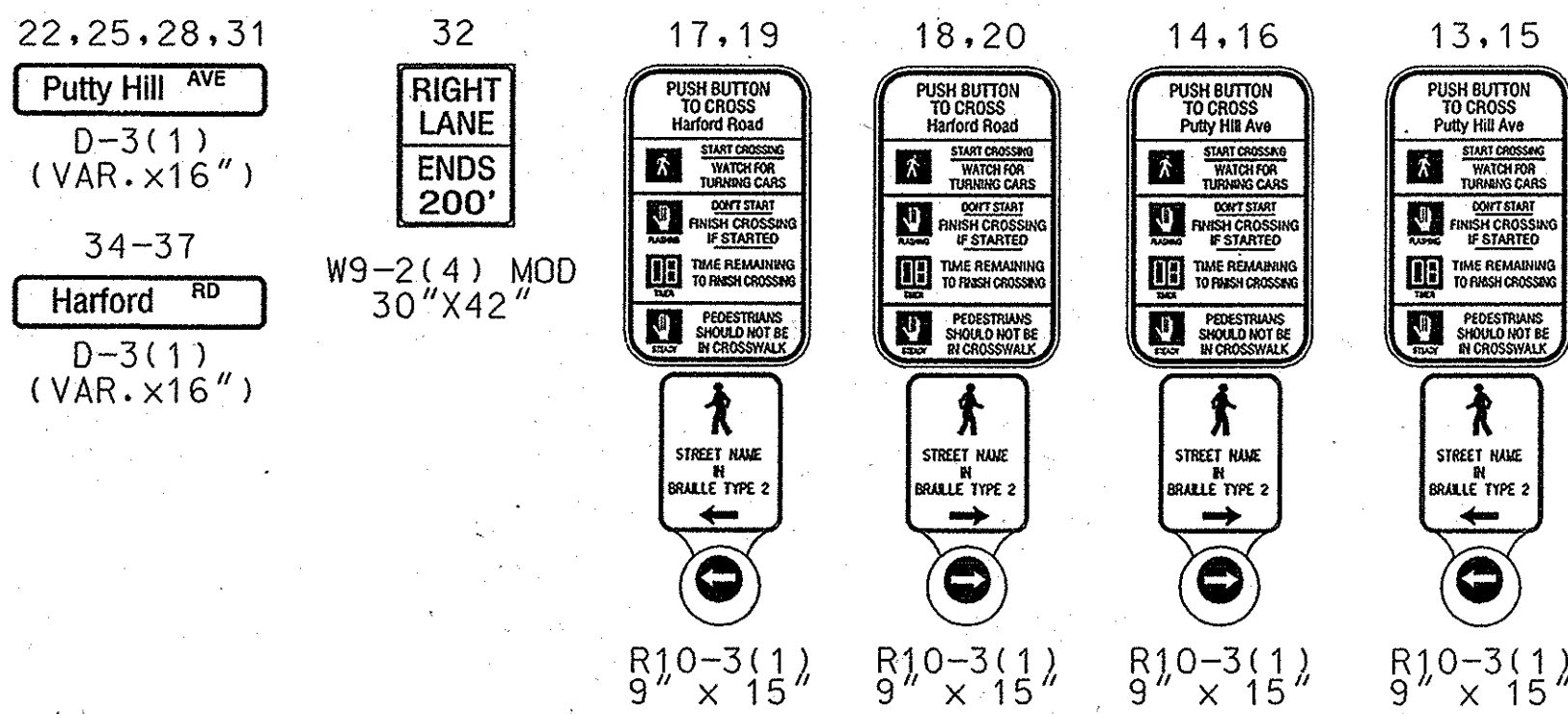
**EXISTING SIGNS
TO BE RELOCATED
(SHOWN AT FINAL LOCATION)**



TO BALTIMORE



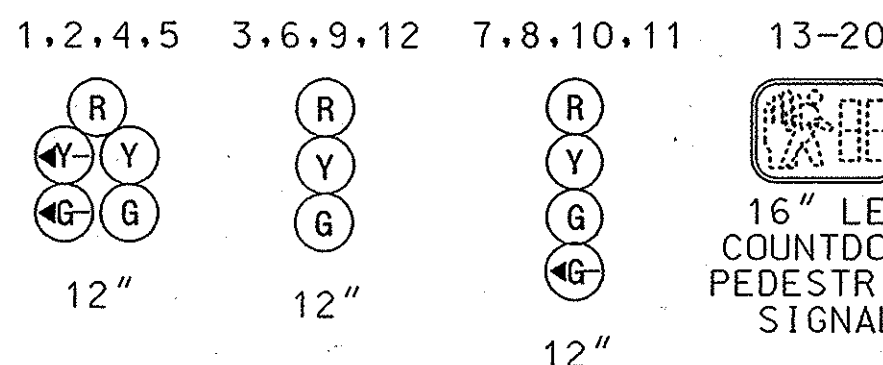
PROPOSED SIGNS



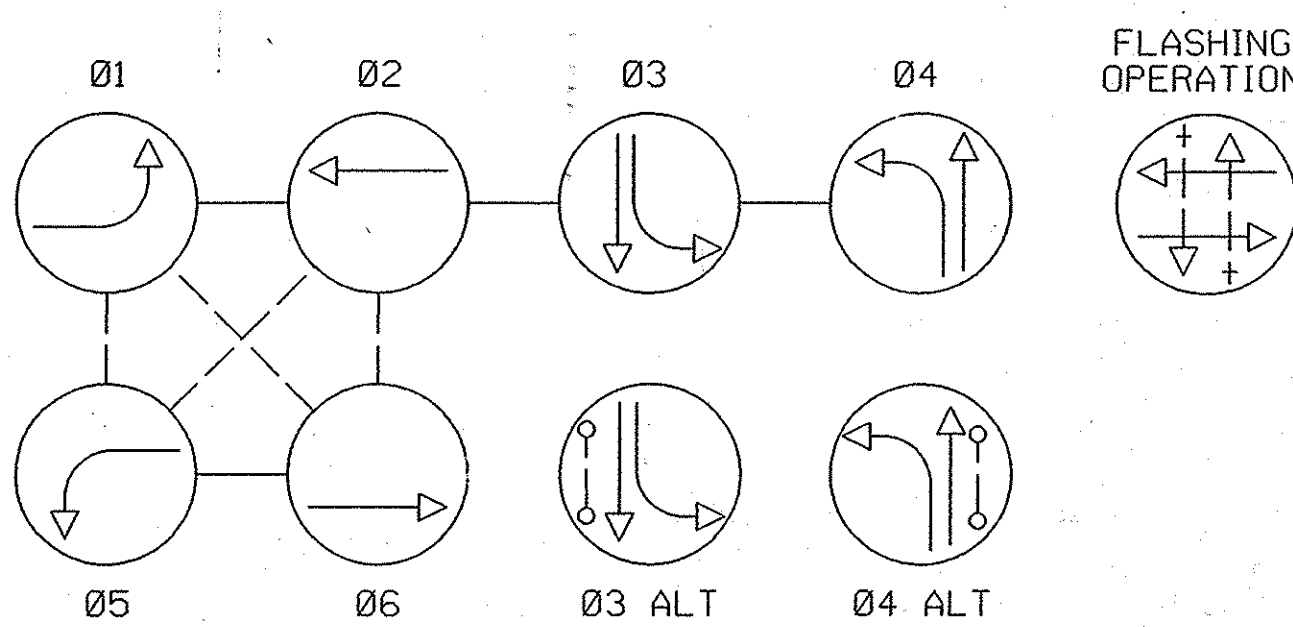
**PROPOSED VIDEO
DETECTION CAMERA**

a, b, c, d, e, f

PROPOSED SIGNALS



NEMA PHASING



NOTE:
PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY.
PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

TO BEL AIR

CONSTRUCTION DETAILS

- INSTALL CONCRETE FOUNDATION WITH A 27 FT. (CUT TO 21 FT.) STEEL POLE WITH A TWIN 50 FT./60 FT. MAST ARMS, TRAFFIC SIGNAL HEADS, SIGNS, COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON INSTALLED WITH VIBRATING ARROW POINTING RIGHT AND R10-3(1) SIGN (SIGN TO READ "PUSH BUTTON TO CROSS PUTTY HILL AVE."), VIDEO DETECTION CAMERAS MOUNTED ON MAST ARM AND RELOCATED SIGNS. (INSTALL 1-2 IN. AND 1-4 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS IN POLE BASE).
- INSTALL CONCRETE FOUNDATION WITH A 27 FT. STEEL POLE WITH A TWIN 50 FT./60 FT. MAST ARMS, TRAFFIC SIGNAL HEADS, SIGNS, COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON INSTALLED WITH VIBRATING ARROW POINTING RIGHT AND R10-3(1) SIGN (SIGN TO READ "PUSH BUTTON TO CROSS PUTTY HILL AVE."), VIDEO DETECTION CAMERAS MOUNTED ON MAST ARM, RELOCATED SIGNS AND 15 FT. STREET LIGHTING ARM WITH A 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE. (INSTALL 1-2 IN. AND 1-4 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS IN POLE BASE).
- INSTALL CONCRETE FOUNDATION WITH 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY BASE, COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON INSTALLED WITH VIBRATING ARROW POINTING LEFT, R10-3(1) SIGN. (SIGN TO READ "PUSH BUTTON TO CROSS HARFORD ROAD"). (INSTALL 1-3 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BEND IN PEDESTAL BASE).
- INSTALL CONCRETE FOUNDATION WITH 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY BASE, COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON INSTALLED WITH VIBRATING ARROW POINTING RIGHT, R10-3(1) SIGN. (SIGN TO READ "PUSH BUTTON TO CROSS HARFORD ROAD"). (INSTALL 1-3 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BEND IN PEDESTAL BASE).
- INSTALL CONCRETE FOUNDATION WITH 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY BASE, COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON INSTALLED WITH VIBRATING ARROW POINTING LEFT, R10-3(1) SIGN. (SIGN TO READ "PUSH BUTTON TO CROSS PUTTY HILL AVE."). (INSTALL 1-3 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BEND IN PEDESTAL BASE).
- INSTALL CONCRETE FOUNDATION WITH 10 FT. STEEL PEDESTAL POLE (CUT TO 5 FT.) WITH BREAKAWAY BASE, AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON INSTALLED WITH VIBRATING ARROW POINTING LEFT AND R10-3(1) SIGN. (SIGN TO READ "PUSH BUTTON TO CROSS HARFORD ROAD"). (INSTALL 1-3 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS IN PEDESTAL BASE).
- INSTALL NEMA SIZE "6" BASE MOUNTED CONTROLLER AND CABINET. SIDEWALK TO BE USED AS CONCRETE PAD. (INSTALL 2-2 IN. AND 2-4 IN. SCHEDULE 80, 90 DEGREE PVC ELECTRICAL CONDUIT BENDS IN CABINET BASE.)
- INSTALL EMBEDDED METERED SERVICE PEDESTAL WITH 2-2 IN. AND 1-4 IN. SCHEDULE 80, 90 DEGREE PVC CONDUIT BENDS IN PEDESTAL BASE.
- REMOVE EXISTING STEEL POLE, MAST ARM, ALL ASSOCIATED EQUIPMENT AND FOUNDATION 12 IN. BELOW GRADE AND BACKFILL. RELOCATE EXISTING W16-7pL, S1-1 AND W16-7pR SIGNS AND BAND TO NEW SIGNAL POLE AS SHOWN.
- REMOVE EXISTING STEEL POLE, MAST ARM, ALL ASSOCIATED EQUIPMENT AND FOUNDATION 12 IN. BELOW GRADE AND BACKFILL. RELOCATE EXISTING W16-7pL, S1-1 AND W16-7pR SIGNS AS SHOWN.
- USE EXISTING WOOD UTILITY POLE AND INSTALL 3 IN. ELECTRICAL PVC RISER FOR EXISTING OVERHEAD INTERCONNECT CABLE. PULL BACK EXISTING INTERCONNECT CABLE HEADING SOUTH AND RE-FEED IN RISER AND CONDUIT TO NEW BASE MOUNTED CABINET. (SEE WIRING DIAGRAM FOR ADDITIONAL INTERCONNECT DETAILS) CONTRACTOR SHALL CUT THE EXISTING INTERCONNECT CABLE TO ALLOW FOR SUFFICIENT LENGTH OF CABLE TO BE RE-FEED TO NEW CABINET TO MAINTAIN COMMUNICATION CONNECTION TO THE NORTH. REMOVE AND DISPOSE OF ALL UNUSED INTERCONNECT CABLE.
- USE CONDUIT PREVIOUSLY INSTALLED BY OTHERS.
- USE HANDHOLE PREVIOUSLY INSTALLED BY OTHERS.
- USE EXISTING HANDHOLE.
- INSTALL SIGNS W16-7pL, S1-1 AND W16-7pR TO BE RELOCATED ON ONE 4 IN. X 4 IN. TREATED WOOD POST AS SHOWN.
- CUT, CLEAN, GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE.
- REMOVE EXISTING HANDHOLE.
- CAP AND ABANDON EXISTING CONDUIT.
- REMOVE EXISTING STEEL POLE, POLE MOUNTED CABINET AND CONTROLLER, MAST ARM, ALL ASSOCIATED EQUIPMENT AND FOUNDATION 12 IN. BELOW GRADE AND BACKFILL. RELOCATE EXISTING W16-7pL, S1-1 AND W16-7pR SIGNS AND BAND TO NEW SIGNAL POLE AS SHOWN. SHA SIGNAL SHOP SHALL BE NOTIFIED TO REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CABINET.

GENERAL NOTES

- ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS. HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN MD 816.03, MD 818.01, MD 818.02, MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
- THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
- VIDEO CAMERA LOCATION / ALIGNING SHALL BE COORDINATED WITH THE SHA ENGINEER.
- THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
- ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.
- ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCCELL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLES TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
- REMOVE AND DISPOSE OF ALL UNUSED SIGNAL CABLE.
- THE CONTRACTOR SHALL NOT CUT MAST ARM AS INDICATED ON PLANS UNTIL MAST ARM POLE LOCATION IS FINALIZED.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18" FROM A 60" X 60" LEVEL LANDING AREA WITH A CROSS SLOPE OF LESS THAN OR EQUAL TO 2%.
- THE 10' SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.09 AND F.S. 4E-2 AND THE NCHRP PUBLICATION, "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- VERIFY PROPOSED GEOMETRICS PRIOR TO INSTALLING SIGNAL EQUIPMENT.
- THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING SIDEWALKS CAUSED BY THE INSTALLATION OF SIGNAL EQUIPMENT.
- THE SIGNAL CONTRACTOR SHALL DETERMINE IF ANY WORK BY OTHER CONTRACTORS CAN NOT BE COMPLETED UNTIL INSTALLATION OF SIGNAL EQUIPMENT IS COMPLETE. THE SIGNAL CONTRACTOR SHALL NOTIFY OTHER CONTRACTORS OF THIS WORK.
- REFER TO SHEET 2 FOR DIMENSIONS OF SIGNAL EQUIPMENT AND PAVEMENT MARKINGS WITHIN INTERSECTION.

SPECIAL NOTES:

THE CONTRACTOR SHALL NOT BLOCK VIEW OF EXISTING SIGNAL INDICATIONS DURING INSTALLATION OF MAST ARM. IF NEW MAST ARM CANNOT BE INSTALLED DUE TO CONFLICT WITH EXISTING SIGNAL INDICATIONS OR SPAN WIRES, A SIGNAL OUTAGE SHALL OCCUR DURING NON-PEAK HOURS AS DIRECTED BY THE ENGINEER.

TOD NO:XX445-05
SHA NO:BA874A52/B52
MD 147@PUTTY HILL AND
EMERALD

SHA

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION
MD 147 (HARFORD ROAD) AND
PUTTY HILL AVENUE



TRAFFIC SIGNALIZATION PLAN

SCALE 1" = 20' ADVERTISED DATE	CONTRACT NO.
DESIGNED BY NOT AVAILABLE	COUNTY BALTIMORE
DRAWN BY NOT AVAILABLE	LOGMILE
CHECKED BY NOT AVAILABLE	TMS NO.
F.A.P. NO. SEE TITLE SHEET	TOD NO.
TS NO.	DRAWING TSP-1 OF 5
SHEET NO. 1 OF 5	

WR&A

Whitman, Requardt and Associates, LLP
Engineers, Architects and Planners

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Baltimore, Maryland 21231
410-235-3450

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIR. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

REBUILD TRAFFIC SIGNAL	AREAWIDE CONTRACT NO. XX4455185	8/15/2008
SRB	NML	
SHA NO. BA6835184	ADDENDUM NUMBER 5	12/12/2006
JRL	AJM	PAT

PLOTTED: 08-22-2008
FILE: n:\31556-180\cad\p8g-P007_m147_AW.dgn

BY: bdonoway